

WHAT IS CLAIMED IS:

1. A laser apparatus comprising:

a plurality of laser output means, each laser
output means obtaining a single optical output
5 synthesized with the laser outputs from a plurality of
laser oscillators; and

control means, the control means lowering the
whole optical output by adjusting the optical outputs
of all of said plurality of laser oscillators of said
10 plurality of laser output means, when a long life mode
is set, and lowering the whole optical output by
stopping the outputs of some of said plurality of laser
oscillators in said plurality of laser output means,
when a low power consumption mode is set.

15 2. A laser apparatus comprising:

a plurality of laser output means, each laser
output means obtaining a single optical output
synthesized with the laser outputs from a plurality of
laser oscillators;

20 detection means provided in each laser output
means, and detecting the quantity of the light
outputted from said plurality of laser oscillators; and

control means specifying one of said plurality of
laser output beams based on the detection outputs of
25 the detection means, and decreasing the brightness of
the light outputted from the specified laser output
beams by adjusting the optical outputs of all of said

plurality of laser oscillators.

3. A laser apparatus comprising:

a plurality of laser output means, each laser
output means obtaining a single optical output
5 synthesized with the laser outputs from a plurality of
laser oscillators;

detection means provided in each laser output
means, and detecting the quantity of the light
outputted from said plurality of laser oscillators; and

10 control means specifying one of said plurality of
laser output beams based on the detection outputs of
the detection means, and decreasing the brightness of
the light outputted from the specified laser output
beams by adjusting the optical outputs of some of said
15 plurality of laser oscillators.

4. The laser apparatus according to claim 1,
wherein the laser apparatus is used as a light source
of R, G and B lights in a projection video display
unit; and the control means maintains the balance of R,
20 G and B optical outputs.

5. The laser apparatus according to claim 2,
wherein the laser apparatus is used as light sources of
R, G and B lights in a projection video display unit;
and the control means maintains the balance of R, G and
25 B optical outputs.

6. The laser apparatus according to claim 3,
wherein the laser apparatus is used as light sources of

R, G and B lights in a projection video display unit;
and the control means maintains the balance of R, G and
B optical outputs.

5 7. The laser apparatus according to any one of
claims 1 - 3, wherein the laser output unit includes a
plurality of resonance optical fibers with a laser
active material added in a core; and said plurality of
laser oscillators pump sources of the corresponding
said plurality of resonance optical fibers.

10 8. The laser apparatus according to any one of
claims 1 - 3, wherein the laser output unit includes a
single resonance optical fiber with a laser active
material added in a core; and the outputs of said
plurality of laser oscillators are synthesized and
15 applied as an excitation light of a resonance optical
fiber.

9. A projection video display unit which
modulates R (red), G (green) and B (blue) lights in
space modulation elements, synthesizes the space
20 modulated lights, and projects the synthesized light
and forms an image on a screen by using an optical
means, comprising:

laser output means for the R (red), G (green) and
B (blue) lights, each laser output means obtaining a
25 single optical output synthesized with the laser
outputs from a plurality of laser oscillators;

detection means provided in each laser output

means, and detecting the quantity of the light
outputted from said plurality of laser oscillators; and

control means, the control means lowering the
optical outputs of all of the laser oscillators in the
5 non-failed laser output means for the other colors,
decreasing the brightness of a display image, and
maintaining the balance of R, G and B optical outputs,
when an error occurs in any of the laser oscillators in
the laser output means.

10 10. A projection video display unit which
modulates R (red), G (green) and B (blue) lights in
space modulation elements, synthesizes the space
modulated lights, and projects the synthesized light
and forms an image on a screen by using an optical
15 means, comprising:

laser output means for the R (red), G (green) and
B (blue) lights, each laser output means obtaining a
single optical output synthesized with the laser
outputs from a plurality of laser oscillators;

20 detection means provided in each laser output
means, and detecting the quantity of the light
outputted from said plurality of laser oscillators; and

control means stopping the optical outputs of some
of the laser oscillators in the non-failed laser output
25 means for other colors, decreasing the brightness of a
display image, and keeping the balance of R, G and B
optical outputs, when an error occurs in any laser

oscillator in the laser output means.

11. A projection video display unit which modulates R (red), G (green) and B (blue) lights in space modulation elements, synthesizes the space modulated lights, and projects the synthesized light and forms an image on a screen by using an optical means, comprising:

laser output means for the R (red), G (green) and B (blue) lights, each laser output means obtaining a single optical output synthesized with the laser outputs from a plurality of laser oscillators;

detection means provided in each laser output means, and detecting the quantity of the light outputted from said plurality of laser oscillators; and

control means lowering the optical outputs of all of the laser oscillators in the non-failed laser output means for the other colors, decreasing the brightness of a display image, and keeping the balance of R, G and B optical outputs, when an error occurs in some laser oscillators in the laser output means, when a long life mode is set, and stopping the optical outputs of some of the laser oscillators in the non-failed laser output means for the other colors, decreasing the brightness of a display image, and maintaining the balance of R, G and B optical outputs, when an error occurs in a laser oscillator in the laser output means, when a low power consumption mode is set.